CLAIMS

The following list of claims replaces all prior versions of claims filed in this application.

1. (Currently amended) An isolated polypeptide, comprising ~~an amino acid sequence selected from SEQ ID NOS: 17-25~~ the amino acid sequence of SEQ ID NO:24.

2. (Canceled).

3. (Currently amended) An isolated polypeptide, comprising ~~an amino acid sequence selected from SEQ ID NOS: 2, 4, 6, 8, 10, and 12~~ the amino acid sequence of SEQ ID NO:8.

4. (Withdrawn) The isolated polypeptide of claim 3, wherein said polypeptide consists of an amino acid sequence selected from SEQ ID NOS: 2, 4, 6, 8, 10, and 12.

5. (Withdrawn) An FP receptor variant binding agent, which binds an amino acid sequence selected from SEQ ID NOS: 21-25 or an epitope thereof.

6. (Withdrawn) The binding agent of claim 5, wherein said binding agent is an antibody, or antigen binding fragment thereof.

7. (Currently amended) A cell, comprising the exogenously expressed polypeptide of ~~claim 1, 2, or 3~~ claim 1 or 3.

8. (Withdrawn) A method for identifying a compound that modulates a FP receptor variant, comprising: a) contacting said FP receptor variant with a compound, wherein said FP receptor variant is an isolated FP receptor variant or a FP receptor variant over-expressed in a genetically engineered cell, and b) determining the level of an

indicator, which correlates with modulation of a FP receptor variant, wherein an alteration in the level of said indicator as compared to a control level indicates that said compound is a compound that modulates a FP receptor variant.

9. (Withdrawn) The method of claim 8, wherein said alteration is an increase in the level of said indicator.

10. (Withdrawn) The method of claim 8, wherein said alteration is a decrease in the level of said indicator.

11. (Withdrawn) ~~The method of claim 8~~ A method for identifying a compound that modulates a FP receptor variant, comprising: a) contacting said FP receptor variant with a compound, wherein said FP receptor variant is an isolated FP receptor variant or a FP receptor variant over-expressed in a genetically engineered cell, and b) determining the level of an indicator, which correlates with modulation of a FP receptor variant, wherein an alteration in the level of said indicator as compared to a control level indicates that said compound is a compound that modulates a FP receptor variant, wherein said FP receptor variant in step (a) is ~~the polypeptide of claim 2~~ the polypeptide of claim 1.

12. (Withdrawn) ~~The method of claim 8,~~ A method for identifying a compound that modulates a FP receptor variant, comprising: a) contacting said FP receptor variant with a compound, wherein said FP receptor variant is an isolated FP receptor variant or a FP receptor variant over-expressed in a genetically engineered cell, and b) determining the level of an indicator, which correlates with modulation of a FP receptor variant, wherein an alteration in the level of said indicator as compared to a control level indicates that said compound is a compound that modulates a FP receptor variant, wherein said FP receptor variant in step (a) is the polypeptide of claim 3.

13. (Withdrawn) The method of claim 8, wherein said FP receptor variant in step (a) is an isolated FP receptor variant polypeptide.

14. (Withdrawn) The method of claim 8, wherein said FP receptor variant in step (a) is a FP receptor variant over-expressed in a genetically engineered cell.

15. (Withdrawn) The method of claim 14, wherein said FP receptor variant is exogenously expressed.

16. (Withdrawn) The method of claim 8, wherein said indicator is calcium.

17. (Withdrawn) The method of claim 8, wherein said compound is a polypeptide.

18. (Withdrawn) The method of claim 8, wherein said compound is a small molecule.

19. (Withdrawn) A method for identifying a compound that specifically binds to a FP receptor variant, comprising: a) contacting said FP receptor variant with a compound, wherein said FP receptor variant is an isolated FP receptor variant or a FP receptor variant over-expressed in a genetically engineered cell, and b) determining specific binding of said compound to said FP receptor variant.

20. (Withdrawn) ~~The method of claim 19~~ A method for identifying a compound that specifically binds to a FP receptor variant, comprising: a) contacting said FP receptor variant with a compound, wherein said FP receptor variant is an isolated FP receptor variant or a FP receptor variant over-expressed in a genetically engineered cell, and b) determining specific binding of said compound to said FP receptor variant, wherein said FP receptor variant in step (a) is ~~the polypeptide of claim 2~~ the polypeptide of claim 1.

21. (Withdrawn) ~~The method of claim 19~~ A method for identifying a compound that specifically binds to a FP receptor variant, comprising: a) contacting said FP receptor variant with a compound, wherein said FP receptor variant is an isolated FP receptor variant or a FP receptor variant over-expressed in a genetically engineered cell, and b) determining specific binding of said compound to said FP receptor variant, wherein said FP receptor variant in step (a) is the polypeptide of claim 3.

22. (Withdrawn) The method of claim 19, wherein said FP receptor variant in step (a) is an isolated FP receptor polypeptide.

23. (Withdrawn) The method of claim 19, wherein said FP receptor in step (a) is a FP receptor variant over-expressed in a genetically engineered cell.

24. (Withdrawn) The method of claim 23, wherein said FP receptor variant is exogenously expressed.

25. (Withdrawn) The method of claim 19, wherein said contacting occurs in vitro.

26. (Withdrawn) The method of claim 19, wherein said compound is a polypeptide.

27. (Withdrawn) The method of claim 19, wherein said compound is a small molecule.

28. (Withdrawn) A method for identifying a compound that differentially modulates a FP receptor variant, comprising: a) contacting said FP receptor variant with a compound, wherein said FP receptor variant is an isolated FP receptor variant or a FP receptor variant over-expressed in a genetically engineered cell; b) determining the level of an indicator which correlates with modulation of said FP receptor variant;

c) contacting a second receptor with said compound; d) determining the level of a corresponding indicator which correlates with modulation of said second receptor; and e) comparing the level of the indicator from step (b) with the level of the corresponding indicator from step (d), wherein a different level of the indicator from step (b) compared to the level of the corresponding indicator from step (d) indicates that said compound is a compound that differentially modulates said FP receptor variant.

29. (Withdrawn) The method of claim 28, wherein said second receptor is a different FP receptor variant.

30. (Withdrawn) The method of claim 28, wherein said second receptor comprises the amino acid sequence SEQ ID NO: 14, or a functional fragment thereof.

31. (Withdrawn) The method of claim 28, wherein the level of said indicator from step (b) is greater than the level of said corresponding indicator from step (d).

32. (Withdrawn) The method of claim 28, wherein the level of said indicator from step (b) is less than the level of said corresponding indicator from step (d).

33. (Withdrawn) ~~The method of claim 28~~ A method for identifying a compound that differentially modulates a FP receptor variant, comprising: a) contacting said FP receptor variant with a compound, wherein said FP receptor variant is an isolated FP receptor variant or a FP receptor variant over-expressed in a genetically engineered cell; b) determining the level of an indicator which correlates with modulation of said FP receptor variant; c) contacting a second receptor with said compound; d) determining the level of a corresponding indicator which correlates with modulation of said second receptor; and e) comparing the level of the indicator from step (b) with the level of the corresponding indicator from step (d), wherein a different level of the

indicator from step (b) compared to the level of the corresponding indicator from step (d) indicates that said compound is a compound that differentially modulates said FP receptor variant, wherein said FP receptor variant in step (a) is ~~the polypeptide of claim 2~~ the polypeptide of claim 1.

34. (Withdrawn) ~~The method of claim 28~~ A method for identifying a compound that differentially modulates a FP receptor variant, comprising: a) contacting said FP receptor variant with a compound, wherein said FP receptor variant is an isolated FP receptor variant or a FP receptor variant over-expressed in a genetically engineered cell; b) determining the level of an indicator which correlates with modulation of said FP receptor variant; c) contacting a second receptor with said compound; d) determining the level of a corresponding indicator which correlates with modulation of said second receptor; and e) comparing the level of the indicator from step (b) with the level of the corresponding indicator from step (d), wherein a different level of the indicator from step (b) compared to the level of the corresponding indicator from step (d) indicates that said compound is a compound that differentially modulates said FP receptor variant, wherein said FP receptor variant in step (a) is the polypeptide of claim 3.

35. (Withdrawn) The method of claim 28, wherein said FP receptor variant in step (a) is an isolated FP receptor polypeptide.

36. (Withdrawn) The method of claim 28, wherein said FP receptor variant in step (a) is a FP receptor variant over-expressed in a genetically engineered cell.

37. (Withdrawn) The method of claim 36, wherein said FP receptor variant is exogenously expressed.

38. (Withdrawn) The method of claim 28, wherein said indicator in step (b) is calcium.

39. (Withdrawn) The method of claim 28, wherein said compound is a polypeptide.

40. (Withdrawn) The method of claim 28, wherein said compound is a small molecule.

41. (Withdrawn) A method for identifying a compound that differentially binds to a FP receptor variant, comprising: a) contacting said FP receptor variant with a compound, wherein said FP receptor variant is an isolated FP receptor or a FP receptor variant over-expressed in a genetically engineered cell; b) determining specific binding of said compound to said FP receptor variant; c) contacting a second receptor with said compound; d) determining specific binding of said compound to said second receptor; and e) comparing the level of specific binding from step (b) with the level of specific binding from step (d), wherein a different level of specific binding from step (b) compared to the level of specific binding from step (d) indicates that said compound is a compound that differentially binds to a FP receptor variant.

42. (Withdrawn) The method of claim 41, wherein said second receptor is a different FP receptor variant.

43. (Withdrawn) The method of claim 41, wherein said second receptor comprises the amino acid sequence SEQ ID NO: 14, or a functional fragment thereof.

44. (Withdrawn) The method of claim 41, wherein said different level of specific binding is an increased level of binding.

45. (Withdrawn) The method of claim 41, wherein said different level of specific

binding is a decreased level of binding.

46. (Withdrawn) ~~The method of claim 41~~ A method for identifying a compound that differentially binds to a FP receptor variant, comprising: a) contacting said FP receptor variant with a compound, wherein said FP receptor variant is an isolated FP receptor or a FP receptor variant over-expressed in a genetically engineered cell; b) determining specific binding of said compound to said FP receptor variant; c) contacting a second receptor with said compound; d) determining specific binding of said compound to said second receptor; and e) comparing the level of specific binding from step (b) with the level of specific binding from step (d), wherein a different level of specific binding from step (b) compared to the level of specific binding from step (d) indicates that said compound is a compound that differentially binds to a FP receptor variant, wherein said FP receptor variant in step (a) is ~~the polypeptide of claim 2~~ the polypeptide of claim 1.

47. (Withdrawn) ~~The method of claim 41~~ A method for identifying a compound that differentially binds to a FP receptor variant, comprising: a) contacting said FP receptor variant with a compound, wherein said FP receptor variant is an isolated FP receptor or a FP receptor variant over-expressed in a genetically engineered cell; b) determining specific binding of said compound to said FP receptor variant; c) contacting a second receptor with said compound; d) determining specific binding of said compound to said second receptor; and e) comparing the level of specific binding from step (b) with the level of specific binding from step (d), wherein a different level of specific binding from step (b) compared to the level of specific binding from step (d) indicates that said compound is a compound that differentially binds to a FP receptor variant, wherein said FP receptor variant in step (a) is the polypeptide of claim 3.

48. (Withdrawn) The method of claim 41, wherein said FP receptor variant in step (a) is an isolated FP receptor polypeptide.

49. (Withdrawn) The method of claim 41, wherein said FP receptor variant in step (a) is a FP receptor variant over-expressed in a genetically engineered cell.

50. (Withdrawn) The method of claim 49, wherein said FP receptor variant is exogenously expressed.

51. (Withdrawn) The method of claim 41, wherein said contacting occurs in vitro.

52. (Withdrawn) The method of claim 41, wherein said compound is a polypeptide.

53. (Withdrawn) The method of claim 41, wherein said compound is a small molecule.

54. (Withdrawn) An isolated nucleic acid molecule, comprising a nucleotide sequence that encodes a polypeptide comprising a) an amino acid sequence having at least 50% amino acid identity with SEQ ID NO: 14, and b) an amino acid sequence selected from SEQ ID NOS: 17-20, or a conservative variant thereof.

55. (Withdrawn) An isolated nucleic acid molecule, comprising a nucleotide sequence that encodes an amino acid sequence selected from SEQ ID NOS: 2, 4, 6, 8, 10, and 12.

56. (Withdrawn) The isolated nucleic acid molecule of claim 55, wherein said nucleotide sequence is selected from SEQ ID NOS: 1, 3, 5, 7, 9, and 11.

57. (Withdrawn) A vector, comprising the isolated nucleic acid molecule of claim 55 or 56.

58. (Withdrawn) A host cell, comprising the vector of claim 57